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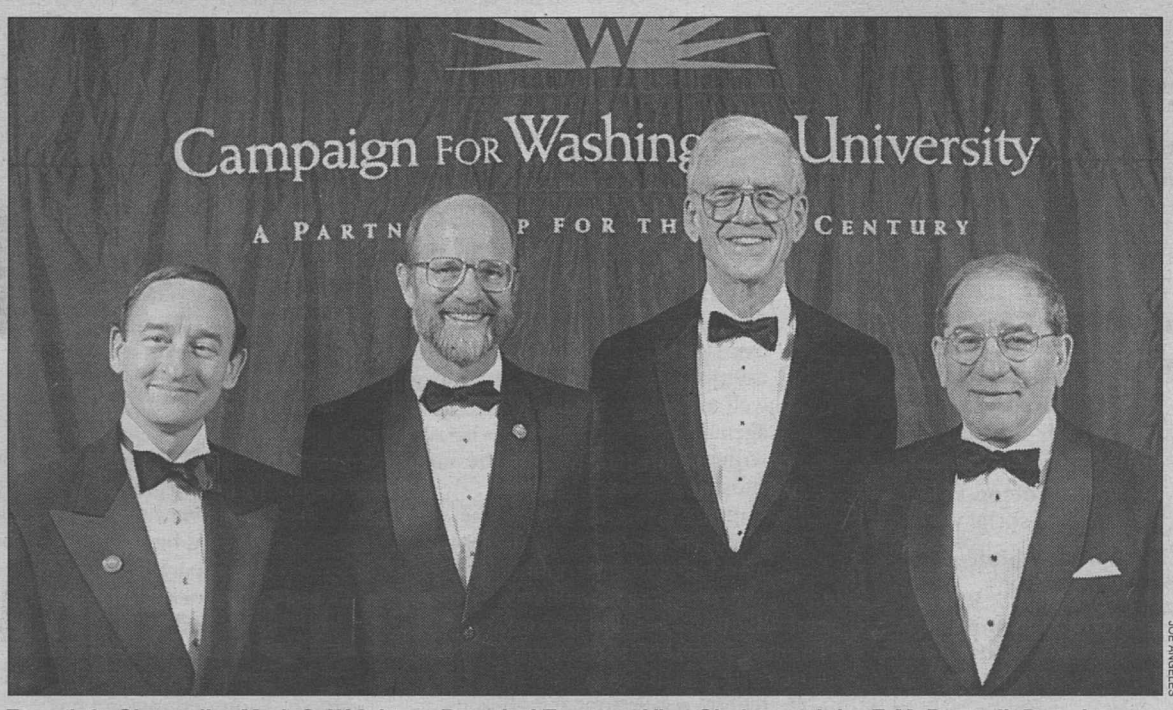
Record

September 24, 1998

Volume 23 No. 5

★ ★ ★ Washington University in St. Louis ⚜ ⚜ ⚜

Campaign for Excellence WU announces $1 billion goal



JOE ANGELES

From left, Chancellor Mark S. Wrighton, Board of Trustees Vice Chairman John F. McDonnell, Board Chairman William H. Danforth and Trustee Sam Fox headline the weekend celebration announcing the Campaign for Washington University.

$541 million already raised in campaign's 'quiet' phase

Saying he is "energized and excited" by the opportunities ahead, Washington University Board of Trustees Chairman William H. Danforth announced the Campaign for Washington University, a major initiative to raise $1 billion in gift support, to assembled reporters and photographers at a news conference Saturday, Sept. 19.

The same evening, the campaign was formally launched at a special event for more than 1,300 invited guests at the America's Center in downtown St. Louis. Those attending included community leaders, faculty, student leaders, alumni, parents and friends from the St. Louis area, throughout the United States and around the world. (See separate story on page 6.)

The theme of the campaign, "A Partnership for the 21st Century," emphasizes the important relationship between the University and society. "When we improve Washington University, we advance the St. Louis region, the nation and the world through the University's educational, research and service mission," Chancellor Mark S. Wrighton said.

"Building a world-class university is a noble endeavor and an exciting challenge," Wrighton continued. "The great research universities of the world have always been at the forefront of advancing knowledge. They educate men and women who become society's leaders. They help shape the social, cultural, political, economic and scientific landscapes of society. They offer the best chance of contributing to the betterment of our world. The overarching purpose of the Campaign for Washington University is to accelerate our ascent among the world's premier universities."

In announcing the campaign, the Board of Trustees identified the following priorities:

• **People — $450 million** to increase the number of endowed scholarships, fellowships and professorships needed to attract and retain talented students and faculty. Of that goal, $275 million is for endowed professorships and faculty support, and $175 million will go toward endowed scholarships.

• **Academic and Student Programs and Libraries — $300 million** to provide ongoing and endowed support for new and existing academic programs, enhance student life and strengthen the libraries.

• **Facilities — $150 million** to underwrite major building and renovation needs.

• **Annual Support — $100 million** to boost unrestricted annual support to help provide annual scholarships for students and develop information resources.

Two prominent businessmen and trustees — Sam Fox, chairman and chief executive officer of Harbour Group Ltd., and John F. McDonnell, retired chairman of the board of McDonnell Douglas Corp. — are co-chairing the campaign. McDonnell directed the pre-announcement leadership phase until the Sept. 19 kickoff, and Fox will lead the public phase from 1998 until its completion in 2004. Trustees J. Stephen Fossett and Mary Ann Krey are co-chairing the annual fund component of the Campaign.

The University joins about a dozen other leading institutions of higher education in the country currently conducting, or that have recently conducted, campaigns with goals of at least $1 billion.

This is the fourth major campaign in the University's history. The Alliance for Washington University, completed in 1987, raised more than $630 million and was the nation's largest campaign of its kind at that time.

"In the decade since the last campaign," Wrighton said, "the research conducted by Washington University's faculty and students has made significant contributions toward solving a wide array of society's ills, from

See **Campaign,** page 6

University wins prized HHMI grant

Students and area elementary, high schools will benefit

By Tony Fitzpatrick

Washington University is one of 58 U.S. universities that will share in $91.1 million in four-year grants from the Howard Hughes Medical Institute (HHMI) to improve the quality of science education for American college students.

The grants, which range between $1.2 million and $2.2 million, bring to more than $425 million the amount awarded since 1988 through HHMI's undergraduate grants program, the largest private initiative in U.S. history to enhance undergraduate science education nationwide.

The universities will use the grants to expand research opportunities for undergraduates, update science courses and curricula, attract new faculty in emerging fields of science and modernize laboratories with new scientific equipment and technology. Many also will expand their science outreach programs with nearby schools and community colleges.

Washington University, which has been funded by this program since 1992, will receive $1.6 million over four years to provide wide-ranging services and support for undergraduate and K-12 science education.

WU will receive $1.6 million over four years to provide wide-ranging services and support for undergraduate and K-12 science education.

The University will use the new funding to support:

• curriculum development, including interdisciplinary, investigative laboratories and computer-aided approaches in chemistry, biology and biomedical physics; incorporation of research into a general genetics course; and development of a new calculus laboratory model;

• courses emphasizing investigative, hands-on activity in biology, physics and math for K-8 teachers and undergraduate science volunteers who take hands-on science into K-8 classrooms and a hands-on genetics curriculum for high school students, now in seven area high schools;

• a research-based program for the University's pre-freshmen; an information resource center with peer tutoring in first-year biology; and proposal-based summer research with a concluding symposium for undergraduates.

This year's fall symposium, the concluding event of the HHMI-sponsored summer undergraduate research program, was held Sept. 12 in McDonnell Hall. Forty-five undergraduate fellows presented talks and posters

See **Grant,** page 7

Committee proposes ways to improve research support services

A steering committee with a mandate to evaluate Washington University's research support services has issued its report along with recommendations to improve grant support and technology transfer services.

In October 1997, Chancellor Mark S. Wrighton commissioned a Universitywide analysis of research support services, asking Theodore J. Cicero, Ph.D., vice chancellor for research, to spearhead the initiative.

Cicero launched the Research Support Services Assessment Project in response, to assess the satisfaction of faculty, administrators and schools with the quality and services provided by the University's research administration functions, to develop data-driven analyses of the existing processes and policies, to uncover issues related to the federal government's goal of on-line management of grants and to determine whether opportunities exist to improve service to the faculty.

Wrighton also appointed a steering committee to work with Cicero in setting the vision and strategic direction for the project, to oversee its execution and to ensure the results were communicated.

The steering committee concluded that, overall, the level of faculty satisfaction with research administration is low and that the current process is fragmented and overlapping. The complexity of the process is heightened by internal and external environmental factors — regulatory and non-regulatory — that are increasing the burden on the administration and faculty.

The committee concluded as well that the University must develop better technology to comply with federal directives to submit grants electronically, to improve the financial reporting system that tracks and manages charges to research grants and to support a more complex research environment.

It also found that lack of training and inadequate communication are of concern to faculty.

"We must adapt our processes and policies in response to the environment and the needs of our faculty," Cicero said. "Washington University is a first-class institution, and our faculty deserve first-rate research support services. This certainly does not appear to be the case at this time."

As a result of its analysis, the steering committee unanimously recommended the following ways to improve the University's research support services:

• develop a vision for research administration and design improvements to our current processes based on the vision;

• continue to enhance efforts in technology transfer already initiated by Cicero;

• develop specific enhancements in our information technology systems to meet current and emerging needs, including electronic research administration and user-friendly research budget summaries and forecasts;

See **Research,** page 2

PETER GRACE

Slip-sliding along Freshmen Alex Watson (left) and Walter Dodson compete in a bungie run at the annual South 40 party known as Soiree in the Swamp. A bungee tether to the back wall and stockinged feet add up to a daunting challenge.

Grading regulations

Study to probe federal agencies

BY GERRY EVERDING

The University's Center for the Study of American Business (CSAB) plans to issue "report cards" on how well the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA) and other federal regulatory agencies comply with a host of statutory and executive requirements. Grades will be handed out in two years.

Richard B. Belzer, Ph.D., an economist who served since 1988 with the federal Office of Management and Budget (OMB) in Washington, D.C., will direct the study. Belzer also will serve as a visiting professor of public policy and as regulatory program manager of the CSAB.

The CSAB study of federal regulatory oversight will examine how well regulatory agencies comply with the procedural, analytic and substantive requirements imposed by Congress and the president to gain management control over federal regulatory decision making. The study is timely because Congress is actively debating how to enhance the efficiency and effectiveness of federal regulation, as well as its oversight by agencies such as the OMB.

"Despite the fact that a comprehensive program of White House-level review of regulations has been in place since 1981, until now, there has been no systematic study of the oversight process or its outcomes," Belzer said. "Prior evaluations have focused on specific regulatory actions and have been criticized for being unrepresentative of the vast array of regulatory activity. In contrast, CSAB will examine the entire gamut of major regulatory actions."

All major regulations — approximately 50 each year of the study — will be evaluated. The final product will be a "report card" to determine how the issuing agency fulfilled its responsibilities.

Belzer also will study centralized executive and legislative oversight, focusing on resolving structural and political conflicts that all existing oversight mechanisms inevitably endure. CSAB will publish the results of its research findings and host symposia in the fall of 1999 and 2000.

> "Until now, there has been no systematic study of the oversight process or its outcomes. … CSAB will examine the entire gamut of major regulatory actions."
>
> RICHARD B. BELZER

During his tenure at the OMB's Office of Information and Regulatory Affairs, Belzer reviewed major regulations issued by the EPA; the FDA; and the departments of Agriculture, Labor and the Interior. He has extensive experience in the use of risk assessment in environmental, health and safety decision making and has been active in the development of such methods for food safety.

Belzer holds a doctorate in public policy from Harvard University and is a graduate of the University of California-Davis. He will lead the CSAB regulatory oversight research program from Washington.

Research

Panel wants improved research support services

— from page 1

• develop a program to help faculty in identifying funding sources; and

• immediately initiate strategies to improve communication, training and mentoring in all matters related to pre- and post-award grant activities.

These findings came from the work of a project team appointed by the steering committee. For the analysis, the team collected information through interviews, focus groups and surveys with faculty and research administrators. Some 415 faculty and 88 administrators responded to the surveys. The consulting firm Coopers & Lybrand helped conduct the review.

Additionally, the project team analyzed process maps for all research-specific administrative activities to determine the efficiency and effectiveness of the current process and compiled information from internal databases to develop an understanding of the University's existing systems for managing research grants.

"'It is quite clear from the team's findings that something is broken, and we need to fix it," Cicero said. "We are confident that the process we're recommending will do that."

For a copy of the report, call the Office of the Vice Chancellor for Research at 362-7010.

Steering committee helps assess research support, propose changes

Members of the steering committee appointed by Chancellor Mark S. Wrighton to help assess research support services and recommend changes include:

Theodore J. Cicero, Ph.D., chair, vice chancellor for research;

Linda B. Cottler, Ph.D., professor of psychiatry;

Kenneth F. Kelton, Ph.D., professor of physics;

Denise A. McCartney, project manager, assistant dean for management services;

Joseph A. McGarry, senior manager, external reporting;

Jeffrey D. Milbrandt, M.D., Ph.D., professor of pathology and of medicine;

John C. Morris, M.D., professor of neurology;

Joel S. Perlmutter, M.D., associate professor of neurology and of radiology;

William G. Powderly, M.D., professor of medicine;

Enola K. Proctor, Ph.D., professor of social work;

Richard A. Roloff, executive vice chancellor;

Benjamin S. Sandler, vice chancellor for financial policy;

Joshua R. Sanes, Ph.D., professor of anatomy and neurobiology;

Bill D. Smith, director of computing and information systems;

John Sprague, Ph.D., professor of political science;

Bradley T. Thach, M.D., professor of pediatrics;

Michael J. Welch, Ph.D., professor of radiology and of molecular biology and pharmacology; and

Karen L. Wooley, Ph.D., assistant professor of chemistry.

Physics in medicine, biology

University College fall lectures begin

Four lectures this fall will explore the application of physics in medical research and clinical practice. The annual Saturday Science lecture series, which is free and open to the public, is sponsored by University College and the Department of Physics in Arts and Sciences.

Led by University scholars and teachers, the lectures will be held from 10 a.m. to noon on four consecutive Saturdays beginning Saturday, Sept. 26, in Room 201 Crow Hall.

This year's theme, "Physics in Medicine and Biology," covers how some widely used techniques are based on research at the forefront of physics. It focuses as well on current research that could lead to a deeper understanding of the human body and its functioning.

The series includes the following lectures:

• Sept. 26 — "Using Sound Waves to Understand the Structure and Function of Normal and Diseased Hearts" presented by James G. Miller, Ph.D., professor of physics;

• Oct. 3 — "The Heart — How it Works and How it Fails" by Sándor J. Kovács, M.D., Ph.D., associate professor of medicine and of cell biology and physiology;

• Oct. 10 — "Magnetic Resonance Imaging (MRI): Using Spin Magnetism to See Inside the Body" by Brian T. Saam, Ph.D., research associate in physics; and

• Oct. 17 — "How Simple Laws Lead to Complex Behavior" by Anders E. Carlsson, Ph.D., professor of physics.

For more information on the Saturday Science lecture series, call University College at 935-6788.

News Briefs

Campus quiz: This decorative panel came from Cuba ... but where is it now? Answer below.

Big savings

Faculty and staff can save 25 percent on bargain books, St. Louis books, sweatshirts and hats at the grand opening of the Campus Store from 3 to 8 p.m. Monday, Sept. 28. The event, "A Salute to Saint Louis," celebrates the completion of a 10-month remodeling of the Mallinckrodt Center store. A 3 p.m. ribbon-cutting ceremony with Chancellor Mark S. Wrighton will kick off the celebration, followed by a 6 p.m. reading by William H. Gass, Ph.D., the David May Distinguished University Professor in the Humanities in Arts and Sciences. Also featured will be information booths on local attractions, including The Saint Louis Art Museum, the St. Louis Zoo, the University City Loop and the Missouri Botanical Garden.

Befriending music

The Department of Music in Arts and Sciences invites you to join the Friends of Music. Now in its eighth year, the Friends of Music provides scholarship support for music students and for undergraduates throughout the University who are seeking musical enrichment through private lessons. The organization also sponsors special music events for its members throughout the year. Membership is open to all members of the University community. For more information, call 935-4841.

Did you know?

The originator of football's screen pass was WU head coach R.B. Rutherford. A key pigskin innovator, Rutherford introduced the play in a 1918 game, and it was unstoppable. The University finished that season with a perfect 6-0 record, including a 20-7 victory over Nebraska, Rutherford's alma mater. The collegiate rules committee outlawed the screen pass in 1919, only to reinstate it a few years later.

Answer: The ornamental stonework can be found on the west wall of South Brookings Hall. It was a Spanish-American War memento sent to the University by Maj. John Stafford of the 8th U.S. Infantry, who had been detailed to the University earlier in the 1890s to provide military training for students.

"News Briefs" includes short items on a wide range of subjects, typically information about resources, benefits and opportunities available to faculty and staff. Readers are invited to submit briefs, which will be used as space permits, to Betsy Rogers, Campus Box 1070, or by e-mail, Betsy_Rogers@aismail.wustl.edu. Please include your name and phone number.

Record
Washington University community news

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Medical School Update

Hormonal advantage Researchers find gender difference in the handling of fats

BY BARBRA RODRIGUEZ

Women may be the weaker sex when it comes to chocolate cravings, but new findings suggest they might be better at handling fatty foods. Studying mice, School of Medicine researchers have found that females might have a hormonal advantage for processing dietary fats.

Organs that use large amounts of energy, such as the heart, usually prefer to break down lipids (fats) rather than carbohydrates (sugars) for fuel. Daniel P. Kelly, M.D., and colleagues at the medical school have shown that male mice whose cells can't sense lipid levels die when the major cellular pathway for metabolizing lipids is shut down. But only a quarter of female mice die under the same circumstances. The study, published in the Sept. 14 issue of The Journal of Clinical Investigation, also revealed that the distinction disappeared in male mice treated with estrogen.

Kelly: Lipid researcher

Kelly, senior author and an associate professor of medicine and of molecular biology and pharmacology, said that the results could help explain why women are less susceptible to certain diseases such as atherosclerosis, which results from a build-up of lipids in blood vessels. The risk for women rises after menopause when estrogen levels plummet.

The findings also might have implications for other forms of heart disease. "It's possible that we have uncovered another pathway for breaking down lipids that is unique to women," Kelly said.

Kelly and colleagues studied mice in collaboration with Frank J. Gonzalez, Ph.D., chief of the Laboratory of Metabolism at the National Cancer Institute. Gonzalez genetically modified the mice to lack a protein that helps cells in the heart, liver and other organs break down lipids. This breakdown occurs primarily in mitochondria, structures that produce energy for cells by dismantling lipids and glucose for fuel.

Kelly and lead author Fatima Djouadi, Ph.D., a visiting scientist who has returned to her post as an investigator at the French biomedical research agency INSERM, gave the genetically modified mice injections of a drug called etomoxir that prevents long chains of lipids from entering mitochondria to be broken down. All nine male mice exposed to the drug died — most within a day of the initial injection. But only two of eight female mice died during the course of treatment. In contrast, there were no deaths when normal mice of either gender were treated with the drug.

The results suggest that the missing protein in the modified mice, called peroxisome proliferator-activated receptor alpha, acts like a thermostat that maintains a room's temperature by turning on heating or cooling systems. Kelly calls the protein a "lipostat" that monitors fat levels inside cells and decides if they need to be broken down for energy. When the lipid sensor is missing, male mice (and some female mice) appear unable to handle the glut of lipids brought on by drug treatment, which build up and "choke" the cells.

To determine the actual cause of death, the researchers tested how well mice could use glucose for energy. Blood glucose levels were measured at five, 10 and 24 hours after etomoxir injections. The researchers found an initial drop in glucose levels for all the mice, but levels bounced back in etomoxir-sensitive female mice, whereas they continued to dip in the males.

Kelly believes that cells in both males and females started using glucose as an alternative energy source when they had difficulty using fats, but the female mice only did this for a few hours, presumably switching to another method of obtaining energy. In contrast, males continued to rely on glucose until they had used it up, resulting in severe hypoglycemia (low blood-glucose levels) and death. A single injection of dextrose, a sugar that can be converted to glucose, saved other males.

The researchers also tested whether hormonal differences played a role in the ability of female mice to recover metabolically. Male mice, like their human counterparts, have the capacity to respond to estrogen if it is present at high levels. When Kelly and his colleagues put slow-release pellets of estrogen under the skin of male mice lacking the lipostat protein, only two out of eight died after etomoxir treatment, mimicking the pattern of their female counterparts.

"This shows how similar males and females are in their innate abilities to handle fats, outside of this very powerful, gender-specific hormone stimulus," Kelly said. He noted that the remaining deaths in male and female mice might result from estrogen fluctuations or other factors.

Next, the researchers will determine whether the alternative energy source involves separate, estrogen-sensitive pathways to use fat or glucose that come into play when the mitochondria are shut down. The work on the alternative energy pathway also could reveal ways of reducing men's risk for cardiovascular disease. And the work might provide insights into the treatment of children with genetic disorders in lipid metabolism, which can cause death if not properly treated.

Highlighting Hispanic heritage Grupo Atlantico's Norka Carr (left), Marta Perez and others will perform from noon to 1 p.m. Friday, Sept. 25, at Steinberg Auditorium in Barnes-Jewish Hospital North. Music, songs and dance from Latin American countries and Spain will be featured in honor of National Hispanic Heritage Month. The event is sponsored by the offices of diversity at the School of Medicine and Barnes-Jewish Hospital.

Shapiro named director of pediatric allergy and pulmonary medicine

Steven D. Shapiro, M.D., associate professor of medicine and of cell biology and physiology, has become director of the Division of Pediatric Allergy and Pulmonary Medicine.

The appointment was announced by Alan L. Schwartz, M.D., Ph.D., the Harriet B. Spoehrer Professor and head of pediatrics at the School of Medicine and pediatrician-in-chief at St. Louis Children's Hospital.

"Steve is an outstanding clinician, teacher and investigator who brings enthusiasm and vision to our allergy and pulmonary medicine division," Schwartz said. "We are very fortunate indeed to be able to recruit such a talented individual to lead our division into the 21st century."

> **"Steve is an outstanding clinician, teacher and investigator who brings enthusiasm and vision to our allergy and pulmonary medicine division."**
>
> ALAN L. SCHWARTZ

Shapiro, also medical director of the respiratory therapy department at Barnes-Jewish Hospital, has done extensive research with genetically modified mice to examine the lungs' response during development and during injury and inflammation. He and his colleagues recently found an enzyme crucial to the onset of emphysema, and, partly based on this research, pharmaceutical companies are developing drugs that may prevent emphysema.

A member of Alpha Omega Alpha, the national honorary medical society, Shapiro won the American Lung Association's Edward Livingston Trudeau Scholar Award each year from 1990 to 1993. From the same association, he received a Career Investigator Award each year from 1994 to 1997.

He serves as deputy editor of the Journal of Respiratory Cell and Molecular Biology and is a member of the American Society of Clinical Investigation.

Shapiro received a bachelor's degree from the University of Chicago in 1978 and a medical degree from the Pritzker School of Medicine at the University of Chicago in 1983. After completing internal medicine training at Barnes-Jewish Hospital and fellowship training in the respiratory and critical care division, he served as chief resident and assistant program director in the Department of Internal Medicine. He joined the Washington University faculty in 1990 as an instructor of internal medicine.

Salkoff studies genes that encode certain bioelectronic nervous system components

Lawrence B. Salkoff, Ph.D., professor of neurobiology and of genetics, has received a four-year $1.2 million grant from the National Institute of Diabetes and Digestive and Kidney Diseases. He is taking a novel approach to studying the genes that encode certain bioelectronic components of the nervous system.

"This is the first attempt to use the complete DNA sequence of a multicellular organism to create a comprehensive picture of potassium channels in a single animal," Salkoff said. "Before this, we were like the blind man feeling one small part of an elephant. Now we hope to obtain a complete picture of all of the components necessary to make a nervous system function."

Potassium channels are membrane-associated proteins that function as electronic switches; when open, potassium usually flows out of the cell, altering the difference in electrical charge between its interior and exterior. Such ion movements enable nerve cells to transmit and process information, while defects in ion regulation underlie many disorders of nerve and muscle.

Salkoff and his colleagues are mining data from the University's Genome Sequencing Center, which is determining the complete DNA sequence of a roundworm called *Caenorhabditis elegans*. This DNA sequence contains the instructions both to build the animal and to regulate its physiological functioning. By year's end, the center will have determined the complete DNA sequence of all one hundred million base pairs that constitute the entire genome.

By analyzing the data, Salkoff and his colleagues have identified 80 genes encoding potassium channels, and there may be more to come.

The 80 genes fall into families, all of which are present in mammals and many even in the simplest animals with a nervous system, such as jellyfish. "This suggests that the basic components of the nervous system evolved a billion years ago," Salkoff said. "They're the fundamental components that make the nervous systems of all animals on earth function."

The gene families have persisted and expanded in mammals, suggesting that evolution has generated variations on a theme rather than designing totally new components. These similarities make the worm useful for clinically relevant research.

However, the functions of most of the 80 genes are not yet known. Therefore, Salkoff intends to study the collection systematically. To see when and where a gene normally becomes active, he tags its regulatory region with the gene for green fluorescent protein. If that gene is expressed in a particular tissue, the tissue will have a green glow easily visible through the worm's transparent body. Salkoff and colleagues will obtain additional clues about function by the expression of each channel gene in the eggs of frogs. Experiments then can determine how that particular channel changes the electrical properties of the frog egg membrane.

Salkoff and his colleagues have already made some surprising findings. For example, it was discovered that some of the roundworm's potassium channel genes are expressed in just a few cells. In one instance, one gene has most of its expression limited to a single cell. "If such patterns of expression prove to be similar in the human nervous system, it will mean that many human potassium channels with limited patterns of expression are still waiting to be discovered," Salkoff said. "So there will be a huge resource to explore."

Salkoff hopes his *C. elegans* project will set a precedent for using the human sequence data that now is coming off the press. "One of our ideas is to show how human genome data will be useful in obtaining a comprehensive picture of an entire gene family," he said.

University Events

DAVID KILPER

The student cast of "Company" performs Stephen Sondheim's musical comedy in The A.E. Hotchner Studio Theatre Oct. 2-4 and 8-10.

Company's coming

Play explores mysteries of relationships

The Performing Arts Department in Arts and Sciences will bring Stephen Sondheim's groundbreaking musical comedy "Company" to life in The A.E. Hotchner Studio Theatre Oct. 2-4 and 8-10. Performances are at 8 p.m. Oct. 2 and 3 and at 3 p.m. Oct. 4 and continue the following week at 8 p.m. Oct. 8-10.

Written by George Furth in 1970 with music and lyrics by Sondheim, "Company" tells the story of Bobby, a young urbanite approaching his 35th birthday and growing increasingly concerned that he isn't yet married. The play consists of a series of vignettes depicting five married couples from Bobby's circle of friends, each of which seems to model a different sort of relationship.

"'Company' is a relatively early piece in the Sondheim canon," said Annamaria Pileggi, artist in residence in performing arts who directs the 14-member student cast. "It broke a certain amount of new ground both as an ensemble piece and as a concept musical, though the songs are really what hold it together. They're so integral to the work and Bobby's journey comes through most clearly in the three that he sings.

"This is a good piece for young actors because it deals with issues that they're having to tackle in their own lives: the imperfection of relationships, the fragility of human interactions," Pileggi added. "By the end, Bobby has come to realize that there is no single ideal, no perfect other."

'Company'

Where A.E. Hotchner Studio Theatre

When Oct. 2-4, 8-10

Tickets $10; $8 for senior citizens, WU faculty, staff and students, from Edison Theatre Box Office, 935-6543, and MetroTix, 534-1111.

The set design, by local architect and University alumnus David Cooperstein, surrounds the stage on three sides and seats audience members in an eclectic mix of park benches, car seats, cafe tables and chairs. "We're doing the whole play as if it takes place in Bobby's apartment," Pileggi explained. "Bobby's apartment floats like an island in the sea of New York — the scenes seem like they could be his memories, as if they're coming from this dream world of his imagination."

For more information, call 935-5858.

Magnificent Rome • 'Boogie Nights' • SIDS • Holy Lands

Exhibitions

"Early Modern European and American Art." Through Oct. 25. Upper Gallery 2, Gallery of Art. 935-4523.

"Magnificent Rome: A 16th-Century View." Through Oct. 25. Lower Gallery 1, Gallery of Art. 935-4523.

"19th-Century American Art." Through Dec. 13. Lower galleries 3 and 4, Gallery of Art. 935-4523.

"The Realist Vision: 19th-Century European Art." Through Oct. 25. Lower Gallery 2, Gallery of Art. 935-4523.

"Visible Poetry: A Survey of Illustrated Books." Through September. Special Collections, fifth floor, Olin Library. 935-5495.

Films

Friday, Sept. 25

7 and 9:30 p.m. Filmboard Feature Series. "The Ice Storm." (Also Sept. 26, same times, and Sept. 27, 7 p.m.), Cost: $3 first visit; $2 subsequent visits. Room 100 Brown Hall. 935-5983.

Midnight. Filmboard Midnight Series. "Vertigo." (Also Sept. 26, same time, and Sept. 27, 9:30 p.m.) Cost: $3 first visit; $2 subsequent visits. Room 100 Brown Hall. 935-5983.

Tuesday, Sept. 29

7 and 9 p.m. Filmboard Foreign and Classic Series. "The Jazz Singer." (Also Sept. 30, same times.) Cost: $3 first visit; $2 subsequent visits. Room 100 Brown Hall. 935-5983.

Wednesday, Sept. 30

6 p.m. Chinese Film Series. "The Savage Land." Room 219 Ridgley Hall. 935-5156.

Friday, Oct. 2

6 and 9 p.m. Filmboard Feature Series. "Boogie Nights." (Also Oct. 3, same times, and Oct. 4, 6 p.m.). Cost: $3 first visit; $2 subsequent visits. Room 100 Brown Hall. 935-5983.

Midnight. Filmboard Midnight Series. "The Adventures of Priscilla, Queen of the Desert" shown in Cinemascope. (Also Oct. 3, same time, and Oct. 4, 9 p.m.). Cost: $3 first visit; $2 subsequent visits. Room 100 Brown Hall. 935-5983.

Lectures

Thursday, Sept. 24

11:15 a.m.-12:15 p.m. Center for Mental Health Services Research brown-bag luncheon seminar. "The Nitty-Gritty of Interview-based Research: Recruiting, Training and Retaining Motivated and Reliable Interviewers." Arlene Stiffman, prof. of social work; Violet Horvath, social work project manager/study coordinator; Peter Dore, data manager; and Hope Krebill, social work study coordinator. Room 39 Goldfarb Hall. 935-5687.

Noon. Genetics seminar. "Genetic Control of Developmental Timing in *C. elegans*." Victor Ambros, Dartmouth College, Room 823 McDonnell Medical Sciences Bldg. 362-3365.

Noon. Visual Sciences Seminar Series. "Unconventional Receptors and Mechanisms in Excitotoxicity." Carmelo Romano, asst. prof. of ophthalmology and visual sciences and of anatomy and neurobiology. East Pavilion Aud., Barnes-Jewish Hospital Bldg. 362-3365.

4 p.m. Chemistry seminar. "Recent Advances in Diradical Chemistry." Dan Little, prof. and chair of chemistry, UC-Santa Barbara. Room 311 McMillen Lab. 362-6530.

4 p.m. Earth and planetary sciences colloquium. "An Astronaut's Perspective of the Dynamic Earth." James F. Reilly II, geologist and shuttle astronaut, NASA Johnson Space Center. Room 362 McDonnell Hall. 935-5610.

4:15 p.m. Philosophy lecture. "The Many Problematic Solutions to the Problem of the Many." Hud Hudson, assoc. prof. of philosophy, Western Wash. U., Bellingham. Room 100 Busch Hall. 935-6670.

Friday, Sept. 25

9:15 a.m. Pediatric Grand Rounds. "Sudden Infant Death Syndrome: Controversies, Mechanisms and Prevention." Bradley T. Thach, prof. of pediatrics. Clopton Aud., 4950 Children's Place. 454-6006.

2 p.m. Thesis defense. "Mammalian Neurogenesis in Pluripotent Stem Cells." Michael F.A. Finley, neurosciences program. Room 426 McDonnell Medical Sciences Bldg. 362-3365.

Saturday, Sept. 26

9 a.m. New Directions in Management Seminar Series. "Avoiding Management Failures in the Implementation and Use of Technology." Terri L. Griffith, assoc. prof. of organizational behavior and technology management. Sponsored by Olin Eliot Society. Cost: $100; reduced rates for Olin Eliot Society or Olin Century Club members. Room 113 Simon Hall. 935-7398.

Monday, Sept. 28

Noon - 1 p.m.. Molecular biology and pharmacology seminar. "Genetic Analysis of Parturition in Mice." Louis J. Muglia, asst. prof. of molecular biology and pharmacology and of pediatrics. The Philip Needleman Library, Room 3907 South Bldg. 362-2725.

Noon - 1 p.m. Work, Families and Public Policy Brown-Bag Seminar Series. "New Evidence on Sex Segregation and Sex Differences in Wages from Matched Employer-Employee Data." Kenneth R. Troske, prof. of economics, UM-Columbia. Room 300 Eliot Hall. 935-4918 or 935-6691.

4 p.m. Immunology Research Seminar Series. "Regulation of Lymphocyte Function and Development by Protein Tyrosine Kinases." Andrew C. Chan, asst. prof. of pathology and assoc. prof. of medicine. Eric P. Newman Education Center. 362-2763.

Tuesday, Sept. 29

Noon. Molecular Microbiology and Microbial Pathogenesis Seminar Series. "Mycobacterium Tuberculosis: A Pathogen That Made a Mistake." Vojo Deretic, assoc. prof. of microbiology and immunology, U. of Mich.- Ann Arbor. Cori Aud., 4565 McKinley Ave. 362-3693.

12:10-12:55 p.m. Physical therapy research seminar. "Psychological Symptoms in Parkinson's Disease." Kevin J. Black, asst. prof. of psychiatry and of radiology and instructor in neurology. Classroom C, lower level, 4444 Forest Park Blvd. 286-1400.

Wednesday, Sept. 30

6:30 a.m. Anesthesiology Grand Rounds. "Inherited Risks for Venous Thrombosis — Perspectives for Clinical Practice." Joseph P. Miletich, prof. of pathology and of medicine. Wohl Aud., 4960 Children's Place. 362-6978.

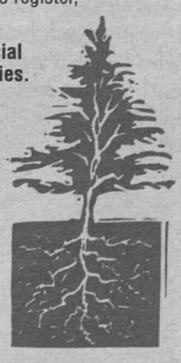
11 a.m. Assembly Series lecture. "Our Masters' Voice: The Growing Power of Global Media." Mark Crispin Miller, prof. of media studies, NYU. Graham Chapel. 935-5285.

4 p.m. Biochemistry and molecular biophysics seminar. "Structural Studies of Antigen Processing and Presentation." Daved Fremont, asst. prof. of pathology. Cori Aud., 4565 McKinley. 362-0261.

Thursday, Oct. 1

8 a.m. Office of Continuing Medical Education Seminar. "Contemporary Cardiothoracic Surgery." (Continues through Oct. 3.) Eric P. Newman Education Center. For costs and to register, call 362-6287.

1:10 p.m. School of Social Work Fall Lecture Series. "The Environmental Challenge to Human Welfare: Outline of a Sensible Response." Peter H. Raven, the Engelmann Professor of Botany and dir., Missouri Botanical Garden. Brown Hall Lounge. 935-4909.



Noon. Office of Continuing Medical Education program. Fifth annual "Current Topics in Cardiothoracic Anesthesia." (Continues through Oct. 3.) Eric P. Newman Education Center. For costs and to register, call 362-6891.

4 p.m. The Cancer Center Seminar Series. "Radiotherapy for the Next Millennium." Alvaro Martinez, chair of radiation oncology, William Beaumont Hospital. Third Floor Aud., St. Louis Children's Hospital. 747-0359.

Global media Speaker tackles oligopolies

Mark Crispin Miller, professor of media studies at New York University, will deliver an Assembly Series lecture titled "Our Masters' Voices: The Growing Power of Global Media" at 11 a.m. Wednesday, Sept. 30, in Graham Chapel. This event is free and open to the public. At 2 p.m. Wednesday, there will be an informal discussion with Miller in the Women's Building Formal Lounge.

At New York University, Miller directs the Project on Media Ownership (PROMO). His writings on film, television, advertising and music have appeared in numerous journals and newspapers, including The Nation and The New York Times. In 1988, he published his first book, "Boxed In: The Culture of TV," followed by "Seeing Through Movies," a collection he edited for Pantheon Books in 1990. He is currently working on two books — "Mad Scientists," a study of propaganda practices in the United States, and "Spectacle: Operation Desert Storm and the Triumph of Illusion."

Through PROMO, Miller has worked to focus public attention on the growing problem of excessive concentration in the U.S. culture industries. Through several special issues of The Nation, among other ventures, PROMO has helped inform the nation of the oligopolistic sway of just a few giant players over television news, book publishing, popular music and cable TV.

Miller earned a bachelor's degree from Northwestern University in 1971 and a doctorate in English from Johns Hopkins University in 1977. Although he specialized in Renaissance literature, Miller is best known as a media critic. Before joining New York University, he served for a number of years as director of film studies at Johns Hopkins University.

For more information, visit the Assembly Series Web page (http://wupa.wustl.edu/assembly) or call 935-5285.

Assembly Series

Who Mark Crispin Miller

Where Graham Chapel

When 11 a.m. Wednesday, Sept. 30

Admission Free and open to the public

8 p.m. Writing Program colloquium. Adam Zagajewski, poet and prof. of creative writing, University of Houston. Hurst Lounge, Dunker Hall. 935-7130.

Friday, Oct. 2

Noon. Cell biology and physiology seminar. "Participation of Matrix in the Activation of Latent TGF-beta: In Vitro and In Vivo Studies." Daniel B. Rifkin, cell biology dept., NYU Medical Center. Room 426 McDonnell Medical Sciences Bldg. 362-2254.

1:45 p.m. School of Architecture Monday Night Lecture Series. "Pale Houses, Silent Shadows." Jennifer Bloomer, prof. of architecture and dir., Post-professional Graduate Program and the Lab. for Experimental Design, Iowa State U. Steinberg Aud. 935-6200.

5:30 p.m. School of Architecture Monday Night Lecture Series. "Place and Identity in Los Angeles." Diane Ghirardo, prof. of architecture, USC. Steinberg Aud. 935-6200.

6 and 8:30 p.m. WU Association Travel Lecture Series. " Stories From the Holy Lands." Sandy Mortimer. Cost: $4.50. Graham Chapel. 935-5212.

Saturday, Oct. 3

1:30 p.m. School of Architecture Monday Night Lecture Series. "Myth and Memory." Jo Noero, the Ruth and Norman Moore Professor of Architecture and dir., Graduate Program in Architecture. Steinberg Aud. 935-6200.

6:45 p.m. School of Architecture Monday Night Lecture Series. History and Memory." Stanford Anderson, prof. of history and architecture and head, architecture dept., MIT. Steinberg Aud. 935-6200.

Music

Friday, Sept. 25

8 p.m. OVATIONS! Series concert. BeauSoleil Avec Michael Doucet. (Also Sept. 26, same time.) Cost: $25. Edison Theatre. 935-6543.

Saturday, Sept. 26

8 p.m. Graduate recital. Music of Beethoven, Obradors, Telemann and Britten. Valerie Schaefer, soprano; Gail Hintz, piano; and Judd Brewer, violin. Graham Chapel. 935-4841.

Sunday, Sept. 27

3 p.m. Concert. WU Wind Ensemble. Dan Presgrave, dir. Brookings Quadrangle. 935-4841.

Performances

Friday, Oct. 2

8 p.m. OVATIONS! Series performance. "Gray on Gray: A Lifelong Conversation." Spalding Gray and Rockwell Gray. Cost: $23. Edison Theatre. 935-6543.

8 p.m. Performing arts dept. performance. "Company." Stephen Sondheim musical. Annamaria Pileggi, dir. (Also Oct. 3, 8, 9 and 10, same time, and Oct. 4, 3 p.m.). Cost: $10; $8 for faculty, staff, students and senior citizens. A.E. Hotchner Studio Theatre. 935-6543.

Saturday, Oct. 3

8 p.m. OVATIONS! Series performance. "Morning, Noon & Night." Spalding Gray. Cost: $23. Edison Theatre. 935-6543.

Miscellany

Thursday, Sept. 24

4:30 p.m. Memorial service. Service for the late Herbert E. Metz, prof. emeritus of drama and of English. Graham Chapel. 935-5858.

Friday, Sept. 25

Noon-1 p.m. National Hispanic Heritage Month Celebration. Music, songs and dances from several Latin American countries and Spain. Steinberg Aud., Barnes-Jewish Hospital North. 362-8425 or 362-6622.

Monday, Sept. 28

3-8 p.m. Campus Store grand opening. "A Salute to Saint Louis." Features ribbon-cutting ceremony; info on area attractions; and a reading by William H. Gass, the David May Distinguished University Professor in the Humanities. Campus Store, Mallinckrodt Center. 935-5500.

Sports

Friday, Sept. 25

10 a.m. Volleyball. UAA Round Robin. Field House. 935-5220.

Saturday, Sept. 26

10 a.m. Volleyball. UAA Robin Round. Field House. 935-5220.

12:30 p.m. Football team vs. Case Western Reserve U. Francis Field. 935-5220.

1 p.m. Women's soccer team vs. Carleton College. Anheuser-Busch Soccer Park, Fenton, Mo. 935-5220.

Sunday, Sept. 27

9 a.m. Volleyball. UAA Robin Round. Field House. 935-5220.

11 a.m. Women's soccer team vs. St. Olaf College. Francis Field. 935-5220.

1 p.m. Men's soccer team vs. Marian College. Francis Field. 935-5220.

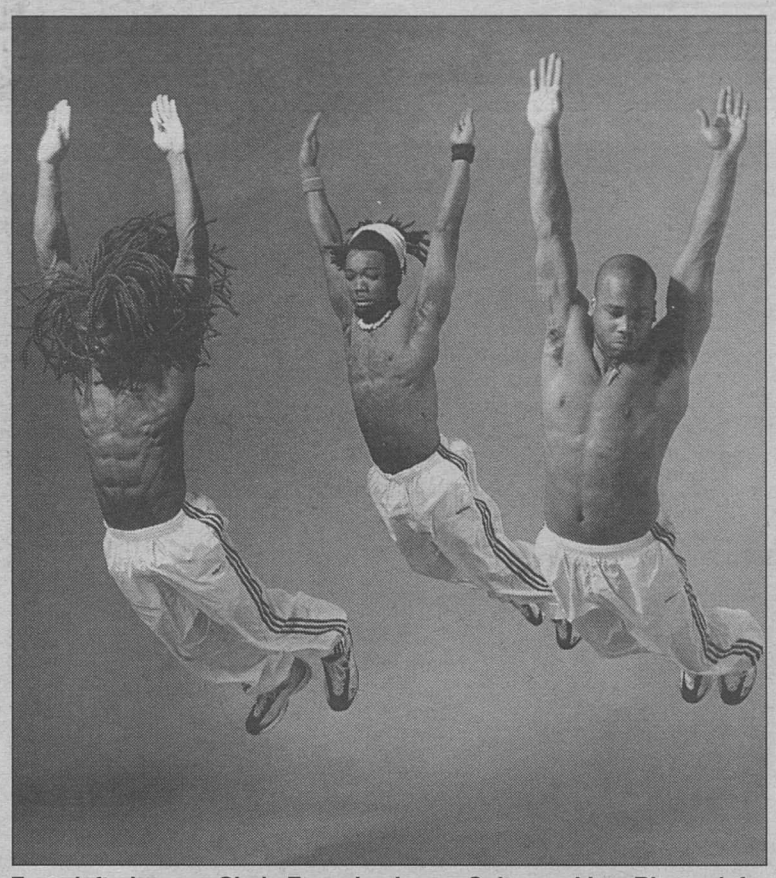
Tuesday, Sept. 29

7 p.m. Men's soccer team vs. Webster U. Anheuser-Busch Soccer Park, Fenton, Mo. 935-5220.

Friday, Oct. 2

5 p.m. Women's soccer team vs. U. of Rochester. Francis Field. 935-5220

7:30 p.m. Men's soccer team vs. U. of Rochester. Francis Field. 935-5220.



From left, dancers Clyde Evan Jr., James Colter and Les Rivera defy gravity in a Puremovement number. The troupe brings its unique mix of African dances and hip-hop to Edison Theatre Oct. 9-11.

Puremovement comes to Edison

Rennie Harris Puremovement will bring its flamboyant and electrifying blend of hip-hop and African-American dance styles to Edison Theatre for a trio of shows Oct. 9-11.

The program, sponsored by Edison Theatre's OVATIONS! Series and Dance St. Louis, takes place at 8 p.m. Oct. 9 and 10, and at 2 p.m. Oct. 11.

Founded in 1992, Rennie Harris Puremovement fuses elements of traditional African dance with such modern African-American forms as hip-hop, stepping, break-dancing and even traces of jitterbug, salsa and the African/Brazilian Capieria martial art. The company effortlessly demonstrates the connections between many contemporary dance movements and the vocabulary of African tribal dance while retaining a strong sense of the energetic improvisations found in present-day club and street dancing.

"Each hip-hop dancer is a choreographer in his or her own right," said Harris in a recent essay on the form. "This is the beauty of hip-hop culture. We create movement and style that represents our individuality ... ."

One of the few hip-hop choreographers making full-scale works, Harris is a pioneer in performing and teaching African-American street dance. The Philadelphia native has toured nationally with three earlier ensembles — the Step Masters, Magnificent Force and the Scanner Boys — which, in the 1980s, performed on MTV and with leading rap artists such as Run-DMC.

Harris is the 1996 recipient of a Pew Fellowship in the Arts for choreography and also has received awards from the Pennsylvania Council on the Arts, the Pew Repertory Development Initiative, the Susan Hess Choreographer's Project, the City of Philadelphia Cultural Fund and the 1996 Philadelphia Dance Projects Commission.

The nine members of Rennie Harris Puremovement have danced and toured with such popular artists as LL Cool J, Boyz II Men, Salt & Peppa, Kool and the Gang, Jazzy Jeff & the Fresh Prince, Markie Mark and the Beach Boys.

The group has toured nationally, performing at venues including the Dance Palace in Washington, Boston's Dance Umbrella, New York's Aaron Davis Hall, the Colorado Dance Festival and the Spoleto Festival in Charleston, S.C.

For more information, call 935-6543.

Rennie Harris Puremovement

Where Edison Theatre

When 8 p.m. Oct. 9 and 10, 2 p.m. Oct. 11

Tickets $23; call for discounts. Available from Edison Theatre Box Office, 935-6543; Dance St. Louis, 534-6622; or MetroTix, 534-1111.

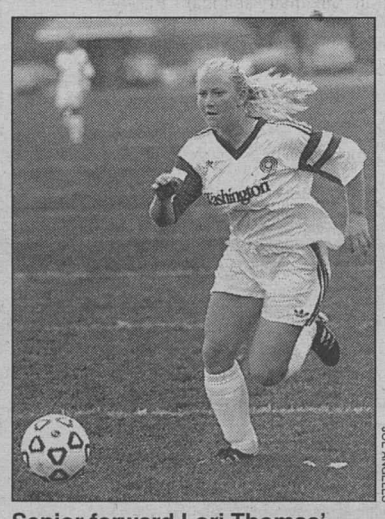
Sports Section

Football Bears suffer first loss

After suffering its first loss of the 1998 season last week at Wabash College, Washington University's football team looks to rebound Saturday when the Bears (2-1) host Case Western Reserve University at Francis Field. Washington U.'s second-half magic ran out Saturday, Sept. 19, as the Bears could not rally for a second consecutive game and suffered a 22-20 non-conference loss at Wabash College. The Bears, who have outscored their foes by a 65-13 margin in the second half of games this season, saw their attempt at a game-winning drive foiled with a fumbled snap on a fourth-and-one play deep in their own territory with one minute, 59 seconds to play in the game. Sophomore quarterback Greg Lake came off the bench in the second quarter and almost rallied the Bears — who trailed 16-0 in the second quarter and 16-6 at halftime — from their second straight double-digit halftime deficit.

Women's soccer wins UAA opener

Washington University's third-ranked women's soccer team opened the University Athletic Association (UAA) season with a 2-0 win Sunday, Sept. 20, at Carnegie Mellon University. Senior forward Lori Thomas netted the game-winner and added an assist. Junior forward Rachel Sweeney also added a goal. Thomas and Sweeney have scored at least one goal each in the last four games and have each scored at least one goal 18 times during their 45-game career together. The Bears, now 5-1 on the year, posted their third-straight shutout and fourth of the season. The WU defense has allowed just two goals this season and only seven shots on goal in the last four games.



JOE ANGELES

Senior forward Lori Thomas' goal wins the Bears' game Sunday, Sept. 20, against Carnegie Mellon University.

Men's soccer wins a pair

Washington University's men's soccer team, which recently fell from the national rankings, bounced back with a pair of victories last week. The Bears (4-2) blanked visiting Aurora University 2-0 Wednesday, Sept. 16, at Francis Field. Freshman Casey Lien netted the game-winner and junior goalkeeper Brian Ko and freshman Lee Devore combined on the shutout. Lien, who has scored three of the Bears' game-winning goals this season, scored twice as the Bears opened their UAA schedule Sunday with a 3-2 victory at Carnegie Mellon University.

Volleyball takes third title

The top-ranked volleyball Bears continued to roll in 1998, winning the Washington University Midwest Invitational and improving their record to 12-0 in the process. The Bears blanked Illinois Wesleyan University, Ohio Northern University and Maryville University, all by a 3-0 gap, before knocking off Elmhurst College, 3-1. A loss to Elmhurst in the first game of the match snapped the Bears school-record 33-game winning streak to start the season. Senior outside hitter Jenny Cafazza was named tournament MVP after hitting .444 with 44 kills and piling up 43 digs. She tied a career-high with 20 digs against Elmhurst. Senior setter Meg Vitter, senior middle blocker Jennifer Martz and sophomore middle blocker Katie Gielow also were named to the all-tournament team.

Cross country has solid showing

Washington's men's and women's cross country teams came away with solid results at the University of Wisconsin-Parkside Invitational Saturday, Sept. 19. The men finished seventh out of 36 teams and were led by junior Tim Julien's sixth-place showing. His time of 26 minutes, 23 seconds on the 8,000-meter course placed him sixth among the 420 runners. The women's team took fourth in a 38-team field. Senior Emily Richard was fourth in a field of 463 runners, covering the five-kilometer course in 18:28.0.

Compiled by Kevin Bergquist, director, sports information, and Keith Jenkins, asst. director, sports information. For up-to-date news about Washington University's athletics program, access the Bears' Web site at rescomp.wustl.edu/~athletics/.

Campus Watch

The following incidents were reported to University Police from **Sept. 14-20.** Readers with information that could assist in investigating these incidents are urged to call **935-5555.** This release is provided as a public service to promote safety awareness and is available on the University Police Web site at **rescomp.wustl.edu/~wupd.**

Sept. 15

11:26 a.m. — A student reported leaving an ATM card in an ATM machine outside Umrath Residence Hall. When the student contacted the bank, the bank reported that someone had used the card to withdraw $500. An investigation is continuing.

4:13 p.m. — A student reported the theft of a bicycle valued at $300 from a room in Wilson Hall.

Sept. 17

9:45 a.m. — A student reported the theft of $50 cash from a bookbag in a Jolley Hall office. An investigation continues.

Sept. 18

10:31 a.m. — A faculty member reported the theft of a computer printer worth $100 from an office in Mallinckrodt Center.

University Police also responded to one additional report of theft, one report of shoplifting, one report of a traffic hazard, two auto accidents, a peace disturbance and a false fire alarm.

The Campaign for Washington University

Master of Ceremonies William H. Webster (left) greets guests at the gala launching the Campaign for Washington University. Webster is an emeritus trustee and a law school alumnus.

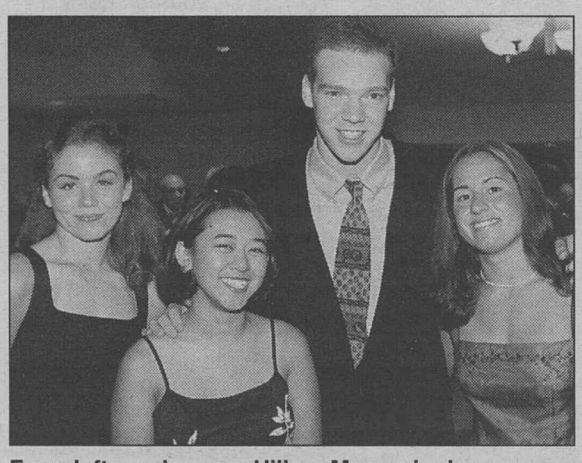
School of Art faculty (from left) Sabina Ott, Jeigh Singleton and Denise Ward-Brown enjoy the festivities at America's Center.

Glittering gala kicks off campaign Sept. 19

BY CYNTHIA GEORGES

Red roses, champagne and a glittering ballroom set the scene. Cameras flashed and gowns sparkled. The guests themselves, however, were the most resplendent of all. Reveling in a new challenge and the promise of good things to come, the University community gathered 1,300-plus strong at America's Center in downtown St. Louis to formally launch the Campaign for Washington University.

Community and student leaders, faculty, alumni, parents and friends from around the world celebrated the announcement of a $1 billion capital campaign that will accelerate Washington University's ascent among the world's universities well into the next millennium.



From left, sophomore Hillary Moore, juniors Jacqueline Maliwat and Tom Habif and sophomore Lindsey Cameron are among the students attending the campaign gala.

"Nothing could be more exciting," said University trustee Lee M. Liberman, chairman emeritus of Laclede Gas, campaign leadership chair for the School of Art and vice chair of capital resources. "We've set ourselves a giant goal and we're convinced we can make it—even exceed it!"

Shanti K. Khinduka, dean of the George Warren Brown School of Social Work, was equally enthusiastic. "This is a memorable landmark occasion," he said. "This effort has energized the entire University community. It is an important event for higher education in America."

Lifting flutes of Codorniu champagne, guests toasted the occasion, renewed friendships and shared news of the University's latest achievements.

Master of Ceremonies William H. Webster, law school alumnus and former director of the Central Intelligence Agency and the FBI, opened the program with a brief welcome.

Guests dined on herbed beef tenderloin paired with broiled salmon. Crème brulée topped with fresh berries and a sprig of mint provided a velvet finish.

Broadway performer and alumna Janet Metz captivated the crowd with "Broadway Baby" and "Neverland" from "Peter Pan." Her rousing tribute to the memory of the late Herbert Metz (no relation), associate professor emeritus of drama and English (no relation), included a poignant rendition of "The Music That Makes Me Dance" from "Funny Girl."

Campaign leaders addressed the gathering.

"Washington University is headed toward the supersonic era," exclaimed University Trustee John F. McDonnell, chair of the leadership phase of the campaign. The retired chairman of the board of McDonnell Douglas Corp. urged everyone to join him on the flight.

Alumnus Sam Fox, chairman and CEO of Harbour Group, Ltd., is chair of the campaign's public phase. He framed the $1 billion initiative in terms of a quality investment in the future leaders of society.

Chancellor Mark S. Wrighton stressed the essential partnership between the University and society. He acknowledged the contributions of tireless volunteers whose efforts to boost Washington University among world institutions have garnered staunch support from all corners of the community.

David V. Habif Jr., M.D., campaign leadership chair of the parents group and an avid scholarship supporter, praised University parents as "a very involved group who want the best for their children and are willing to work toward that goal." Father of Stephanie, '97, and Meredith, a senior business major, the Tenafly, N.J., physician also has a niece and two nephews who chose to attend Washington University.

Such is the hope of the faculty. "The medical school may rank No. 3 in the country, but our students are No. 1," said Emily Smith, assistant professor of radiology and chair of the medical school's annual fund. Smith earned undergraduate and medical degrees from the University. The need for scholarship funds never ends, she noted, "for we know that availability of scholarships attracts the best students."

University faculty are poised for the challenge. "Our goal is to make biomedical engineering one of the premier departments of its kind in the country," said Frank C-P Yin, the Stephen F. and Camilla T. Brauer Professor of Biomedical Engineering.

Added Kathleen Brickey, the James W. Carr Professor of Criminal Jurisprudence at the School of Law: "The best law schools in the country are affiliated with the best universities. Being part of a premier educational institution enhances both opportunities for exciting interdisciplinary work and interaction with noted teachers and scholars."

Following the singing of the alma mater, a net suspended over the dais released a cascade of red, white and green balloons. The words of William H. Danforth, chairman of the Board of Trustees, crystalized the spirit of the event:

"What Arnold Toynbee said of civilization," Danforth said, "is also true of a great university. He said, 'Civilization is a process and not a condition, a voyage and not a harbor.' We cannot hand on to our successors a finished work or a safe haven. What we can hand on is a restless institution, striving for excellence, working always to be better, a beacon for all who love education. I am sure that is what we all want and why we are all here."

Campaign

WU announces $1 billion goal

— from page 1

major breakthroughs in the understanding of debilitating and life-threatening diseases to innovative approaches for helping people make a positive transition from welfare to work.

"We will make great strides by improving support for existing programs and encouraging development of new areas of learning and research, including pediatric research, biological sciences, visual arts and design, American culture studies, executive education and biomedical engineering — to mention only a few," Wrighton added.

Gifts and commitments received from private sources between July 1, 1995, and June 30, 2004, will count toward the campaign. Of the $541 million already received or committed toward the goal, the largest single commitment is $100 million received from the Danforth Foundation in November 1997.

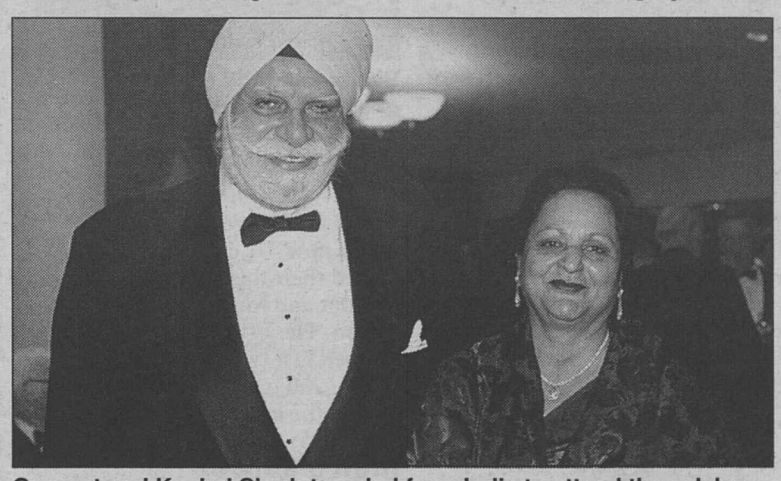
'Significant impact'

Wrighton told reporters that the gifts and commitments already made are having a "significant impact" on the University and the community, especially through endowed professorships in fields ranging from biomedical engineering to biology to business to art. These funds also have helped strengthen financial aid and programs to further diversify the student body.

Calling the goal of $1 billion a realistic challenge, Fox expressed faith in the University community. "Washington University cannot do everything, but everything it does must be excellent," Fox said. "The Campaign for Washington University is a campaign for excellence."

McDonnell said: "Thousands of alumni and friends care deeply about this University. They recognize what it does for the betterment of society." Of the campaign's success so far, he added, "people have been more enthusiastic and more generous than we could possibly have anticipated."

The Campaign for Washington University is the result of three years of strategic planning in Project 21, an initiative designed to ensure the University's leadership in serving society into the next century. Input from hundreds of faculty, alumni, trustees, staff, and national and local academic and corporate leaders led to the decision to embark on the campaign.



Gupreet and Kushal Singh traveled from India to attend the celebration weekend and a meeting of the International Advisory Council for Asia. Gupreet Singh is an alumnus and a member of the council.

From left, Kleila Carlson, publications editor at the School of Medicine; Louise Jones, wife of David C. Jones, planned giving officer; and Sue Ghidina, senior director of annual giving, celebrate with the University community at the banquet.

Notables

Speaking of

Mario Castro, M.D., assistant professor of medicine, was one of three applicants chosen to present an abstract at the national meeting of the General Clinical Research Centers in Arlington, Va. Castro's work was titled "The Role of Stat1 in Mediating Inflammation in Asthma."

Of note

Victoria J. Fraser, M.D., assistant professor of medicine, has received a two-year $240,777 grant from the Department of Health and Human Services for a project titled "Research and Demo Programs in Surveillance, Prevention and Control of Health Care." …

Lawrence M. Kotner Jr., M.D., associate professor of radiology, recently was elected a member of the Washington University Alpha Omega Alpha Honorary Medical Society. …

Keith M. Rich, M.D., associate professor of neurological surgery, of anatomy and neurobiology and of radiology, received a four-year $876,782 grant from the National Institute of Neurological Disorders and Stroke for a project titled "BCL-2 Family and P53 Genes Alter Apoptosis in Gliomas." …

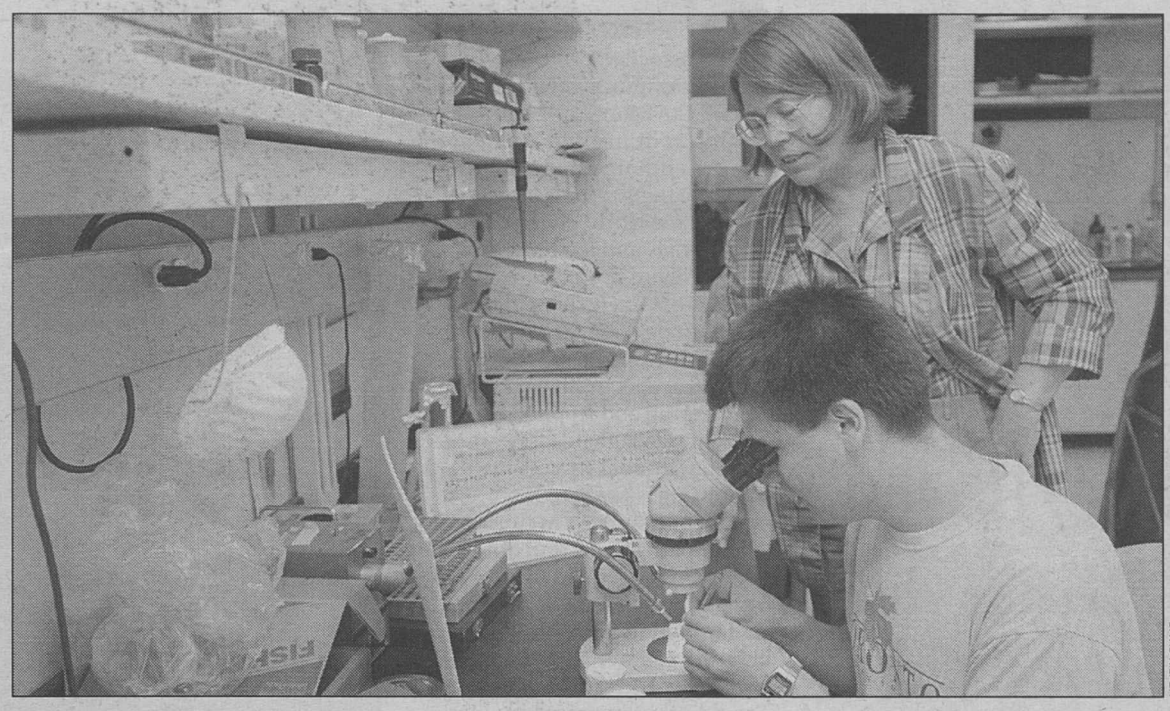
James B. Skeath, Ph.D., assistant professor of genetics, has received a one-year $200,000 grant from the Cancer Research Fund for a project titled "Analysis of Sanpodo and Numb Gene Function During Drosophilla CNS Development."

On assignment

Patty Jo Watson, Ph.D., the Edward Mallinckrodt Distinguished University Professor of Anthropology, and **Richard A. Watson,** Ph.D., professor of philosophy, recently were fellows at the Bogliasco Foundation near Genoa in Italy. In addition, a new edition of Patty Jo Watson's "Archaeology of the Mammoth Cave Area" was printed by Cave Books in June. A new edition of Richard Watson's "The Breakdown of Cartesian Metaphysics" recently was reprinted by Hackett Publishing Co., as was his "The Philosopher's Diet: How to Lose Weight and Change the World" from David R. Godine Co.

Guidelines for submitting copy:

Send your full name, complete title(s), department(s), phone number and highest-earned degree(s), along with a description of your noteworthy activity, to Notables, c/o David Moessner, Campus Box 1070, or e-mail David_Moessner@aismail.wustl.edu. Items must not exceed 75 words. For information, call 935-5293.



DAVID KILPER

John A. Bernat Jr., a senior in Arts and Sciences, peers through the microscope in the laboratory of Sarah C.R. Elgin, Ph.D., professor of biology. Bernat is a Howard Hughes Medical Institute (HHMI) fellow and has been conducting research at the University since the summer before his freshman year through the recently re-funded HHMI undergraduate grants program.

Grant

Science education funds to expand outreach programs

— from page 1

throughout the day.

Sarah C.R. Elgin, Ph.D., professor of biology, directs the University's Undergraduate Biological Sciences Education Program. The University received $1.7 million in 1992 and $1.4 million in 1994 from the HHMI program.

HHMI invited proposals from 205 research and doctoral universities. The 191 proposals received were reviewed by a panel of scientists and educators to provide guidance to HHMI's staff, which submitted a recommended list of awards to the institute's trustees for their approval.

The undergraduate grants program is the largest of several HHMI initiatives to improve science education from elementary school through postgraduate training. Founded in 1953, the institute is the nation's largest private philanthropy.

Since 1988, more than 30,000 undergraduates nationwide have been involved in scientific research with funding from the HHMI program. More than 89,000 elementary, middle and high school students and more than 32,000 pre-college teachers have participated in outreach programs.

"With the support of the Howard Hughes Medical Institute, Washington University has made a very substantial impact on science education in several area secondary schools, and our undergraduates have been exposed to outstanding research experiences," Chancellor Mark S. Wrighton said. "The University is grateful to continue in this exciting endeavor to expand science education and science participation."

More than 330 Hughes investigators conduct medical research in HHMI laboratories at 72 academic medical centers and universities nationwide. Ten Washington University faculty in the School of Medicine are HHMI investigators.

Campus Authors

William H. Gass, Ph.D., the David May Distinguished University Professor in the Humanities and director of the International Writers Center in Arts and Sciences

Cartesian Sonata and Other Novellas

(Alfred A. Knopf Inc., New York, 1998)

From the award-winning author of "The Tunnel" and "Finding a Form" come four interrelated novellas that explore mind, matter and God.

In the first novella, "Cartesian Sonata," Gass redefines Descartes' philosophy. God is a writer in a constant state of fumble. Mind is represented by a housewife who is a modern-day Cassandra. And Matter is, what (and who) else but the helpless and confused husband of Mind.

Gass: Explores mind, matter, God

In the novella that follows, titled "Bed and Breakfast," the concept of salvation is explored through material possessions — a collection of kitsch — as a traveling businessman is slowly lost in the sheer surfeit of matter in a small Illinois town.

In the third, "Emma Enters a Sentence of Elizabeth Bishop's," Gass explores the mind's ability to escape. A young woman growing up in rural Iowa finds herself losing touch with the physical world as she loses herself in the poetry of Elizabeth Bishop.

And in "The Master of Secret Revenges," God appears in the form of Descartes' evil demon, Lucifer, as Gass chronicles the life of a young man named Luther and his development from his devilish youth to his demonic adulthood.

A profound exploration of good and evil, philosophy and action, the book is filled with the wit and style that have defined the work of William Gass.

(Excerpted from book jacket.)

A recent release available at the Campus Store in Mallinckrodt Center on the Hilltop Campus or at the Washington University Medical Bookstore in the Olin Residence Hall. For more information, call 935-5500 (Hilltop Campus) or 362-3240 (Medical Campus).

School of Law to honor four at annual alumni dinner Oct. 2

The School of Law will recognize four outstanding alumni at its 26th annual Alumni Dinner Friday, Oct. 2, at the Ritz-Carlton Hotel St. Louis. Those receiving Distinguished Alumni Awards are David W. Detjen, Thomas C. Hullverson, Leo M. Romero and Stanley M. Rosenblum.

The Distinguished Alumni Awards are presented to alumni whose achievements have been truly outstanding, whether in a traditional legal career or in a wide variety of other related career paths. In addition to career achievement, consideration is given to their noteworthy contributions to education, civic causes, professional societies and public service.

Detjen has been a partner in the New York firm of Walter, Conston, Alexander & Green since 1983, primarily representing European clients in international transactions. He is the author of the book "The Germans in Missouri, 1900-1918" as well as several legal handbooks published in the United States and Germany. Since 1988, he has been executive editor of the International Law Practicum, published by the New York State Bar Association. Currently a member of the law school's National Council, he received a law degree in 1973 and was selected to the Order of the Coif. He received a bachelor's degree with honors in history from the University in 1970.

Hullverson, an expert in personal injury law, medical malpractice law and products liability law, is a partner in the St. Louis-based Hullverson Law Firm.

Among his numerous recognitions, Hullverson was admitted to the Inner Circle of Advocates, a group of the top 100 plaintiff attorneys in the United States; is a diplomate of the American Board of Professional Liability Attorneys; and a fellow of the International Society of Barristers and the International Academy of Trial Lawyers. In 1992, he founded and continues to sponsor the nationally acclaimed St. Louis Internship Program, which has been replicated in 38 cities. An adjunct professor of trial practice at the law school since 1986, he received a bachelor's degree in political science and his law degree, both in 1959, from the University.

Romero is a professor of law and former dean of the University of New Mexico School of Law. He is the author of more than 30 publications, including books, law review articles, book reviews and monographs, and has submitted legal briefs in the United States and New Mexico supreme courts, as well as legislative proposals for the New Mexico legislature. Romero, who has taught throughout the United States and in Argentina, chairs the national Law School Admission Council Board of Trustees. A member of the law school's National Council, he received a law degree in 1968.

Rosenblum is a founding partner of the St. Louis firm of Rosenblum, Goldenhersh, Silverstein and Zafft. During his long and distinguished career, he has argued cases before the U.S. Supreme Court, various federal appellate courts and the Missouri Supreme Court. Rosenblum was an original faculty member of the law school's Master of Laws Taxation Program instituted in 1966 and served as an adjunct law professor until 1993. He received a bachelor's degree from the College of Arts and Sciences in 1943 and a law degree in 1947 from the law school, where he was selected to the Order of the Coif.

Employment

Use the World Wide Web to obtain complete job descriptions. Go to **cf6000.wustl.edu/hr/home (Hilltop)** or **medicine.wustl.edu/wumshr (Medical).**

Hilltop Campus

Information regarding positions may be obtained in the Office of Human Resources, Room 130, West Campus. If you are not a WU staff member, call 935-9836. Staff members call 935-5906.

Assistant Director, Alumni and Parents Admission Program 990067

Coordinator of Events and Volunteers 990068

Lab Technician 990078

Medical Campus

This is a partial list of positions at the School of Medicine.

Employees: Contact the medical school's Department of Human Resources at 362-7196. External candidates: Submit resumes to the Office of Human Resources, 4480 Clayton Ave., Campus Box 8002, St. Louis, MO 63110, or call 362-7196.

Statistical Data Analyst 990042

Medical Secretary II 990203

Clerk II 990218

Purchasing Assistant I 990230

Purchasing Assistant I 990249

Secretary II 990259

Research Animal Standards Coordinator 990327

Network Technician I 990329

Social Worker/ Family Therapist 990359

Obituaries

Carol Kay, former faculty member

Carol Kay, an interdisciplinary scholar of the 18th century who taught at Washington University from 1983 to 1988, died Saturday, Sept. 12, 1998, in Pittsburgh. She was 51.

Kay was an associate professor of English at the University of Pittsburgh, where she had taught since 1989. She also had taught at Princeton University, Amherst College and New York University.

She was the author of "Political Constructions" (1988), an authoritative volume on 18th-century fiction and politics.

Washington People

When impatience becomes a virtue

Douglas C. Schmidt, Ph.D., turns an impetuous nature into countless benefits for consumers, corporations and institutions worldwide

By Tony Fitzpatrick

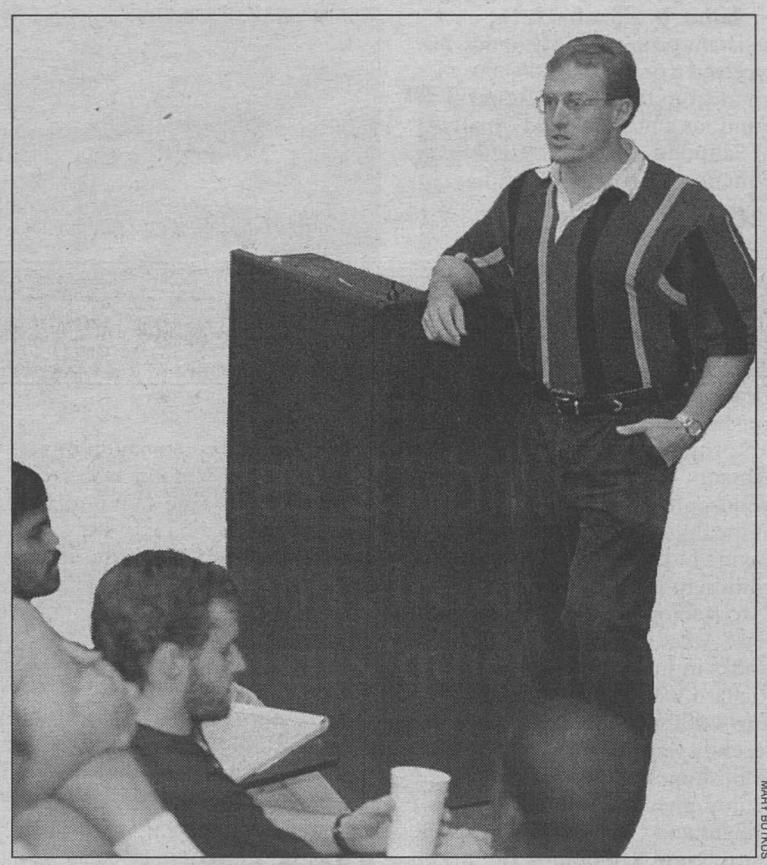
Douglas C. Schmidt, Ph.D., associate professor of computer science and at the School of Medicine's Mallinckrodt Institute of Radiology, has authored more than 100 scholarly publications and traveled the world giving computing tutorials and lectures. Affable, animated and power-packed from 20 years of weight-training and ballroom dancing, he is recognized as one of the most dynamic young teachers in the School of Engineering and Applied Science.

Schmidt said at least part of his international success in computing is owed to his impatient nature. "I'm fundamentally impatient and find doing the same things over and over again frustrating and a waste of time," Schmidt said in his fifth-floor Bryan Hall office, in which a prominent feature is a poster of Arnold Schwarzenneger in his pre-"Terminator" days.

"As a graduate student, I began to see that there was a lot of commonality in the software arena," he continued. "Diverse companies, laboratories and institutions were having to spend countless hours and lots of money to write software from scratch for their applications, despite the fact that most of the software functions shared a lot of common features that were not being exploited. What was needed was a core middleware infrastructure that could be used over and over again with diverse operating systems, networks and hardware. The approach that I came up with is largely a way to avoid busywork and redundancy."

The concept Schmidt pondered in his graduate school days has led to the development of packages he's named ACE and TAO (pronounced "dow") now being used in organizations ranging from the U.S. Navy to the CERN Physics Laboratory in Switzerland to Boeing Advanced Avionics Systems and Siemens Medical Instruments Corp., among many others.

ACE and TAO inhabit the domain of what is called middleware, a layer of computer software that has grown increasingly important for a host of applications. ACE provides software components that shield applications developers from operating system differences, so that applications can be written on any kind of operating system. It is a kind of flak jacket that keeps proprietary commands or functions from interfering with application portability.



MARY BUTKUS

Douglas C. Schmidt, Ph.D., draws his research group together in a special session to discuss projects and plans for the academic year. Schmidt and his students have made major impacts worldwide in the area of software middleware.

Consider Boeing, makers of the F-15, F/A-18 and the famous AV8/B, or Harrier Jet. They are using ACE and TAO to design and build the next generation models of all three products. While the three models are quite different physically, the various functions — or logic routines — that the computing systems perform to navigate the crafts and control the weapons are nearly identical in all instances.

"Boeing was building all the software for those planes from scratch, over and over again," Schmidt explained. "What ACE and TAO provide is a way to have a common software architecture for them all. This middleware infrastructure allows Boeing to make planes basically all work the same from a software point of view, rather than having to redevelop the functions independently multiple times."

The giant medical imaging company Siemens was in a similar dilemma. Siemens manufactures computed-tomography, ultrasound and magnetic resonance imaging instruments throughout the world. In the 1990s, Siemens conceived an ambitious project to come up with a common software architecture that would be the foundation for the instrument control processes of their different machines. Siemens representatives contacted Schmidt, after learning of work he and his group were doing with Barnes-Jewish Hospital and the medical school's Electronics Radiology Laboratory. Schmidt began working with Siemens in 1994, his first year at the University, and they have sponsored his work ever since.

To understand ACE and TAO, it's helpful to think of computer systems as comprised of layers like a cake or a stack of pancakes. The stacking is aligned like this: the network and hardware are on the bottom, followed by the operating system — Unix, Windows NT, Windows 95, for example — then, in Schmidt's scheme, ACE and TAO middleware, and finally the application. Each layer is "conversant" with the other through interfaces and protocols to achieve the end result of the application, say navigating a fighter airplane or transmitting a medical image.

While ACE effectively hides operating systems differences, TAO is used to shield yet more details from a system's lower-level software and hardware. TAO has made its biggest impact by enhancing time-critical applications such as fighter aircraft, air traffic control, medical image acquisition and multimedia, such as teleconferencing.

Worldwide use

ACE and TAO are all over the world, not simply through organizations and institutions that use them, but through thousands of weekly visitors to Schmidt's Web site at www.cs.wustl.edu/~schmidt/".

"Everything we've done with ACE and TAO and some other projects as well is available on the Internet," he said. "People can download the software we've built and make their own adjustments. We then integrate their suggestions, resulting in better R & D products. We can literally work with people around the world in every time zone every hour of the day."

Schmidt's Web site averages 600 hits a day from around the world. The visibility in part has led to the development of spin-off companies in St. Louis and elsewhere specializing in ACE and TAO and to landing top-notch graduate and undergraduate students.

Schmidt is highly valued by his department and the engineering school, according to Catalin Roman, Ph.D., professor and chair of the Department of Computer Science.

"Doug is pure energy," Roman said. "Everything he does is an Olympic event, be it teaching a new and innovating class, getting his work in print or raising money for his ambitious research agenda. It is indeed rare for a young faculty member to bring so much visibility to the department and the University in such a short time span."

Schmidt teaches two undergraduate courses, one in operating systems and the other in design patterns and frameworks. He also teaches graduate courses in operating systems and distributed system software development.

Schmidt's accomplishments are all the more impressive considering his background. He holds bachelor's and master's degrees in sociology, attained in 1984 and 1986, respectively, from the College of William and Mary. While pursuing the master's degree, he found himself drawn into the lure of computing just when the personal computer revolution was taking off.

Changing fields

"When I started playing with my own computer, I found I had a great aptitude for computing, but there just hadn't been any opportunity to explore it when I was younger," he said.

He was accepted into the computer science program at the University of California-Irvine on the strength of his potential and strong recommendations, one of which came from a weightlifting buddy at William and Mary who just happened to be a professor of computer science.

Schmidt said studying sociology provided him insight into group dynamics and group psychology, and the writing and speaking abilities he has honed have been helpful as a computer scientist.

"I was drawn to sociology because of my fascination with how groups work," he said. "The background has helped me speak to groups, get grants, motivate students and understand social dynamic interactions. It's a misconception about computer science that it's entirely mathematical. Computing is about being able to reason abstractly. Math is certainly one way to do that but not the only way. Creative, expressive people can find a good niche in computer science."

Douglas C. Schmidt, Ph.D.

Born Bethesda, Md.

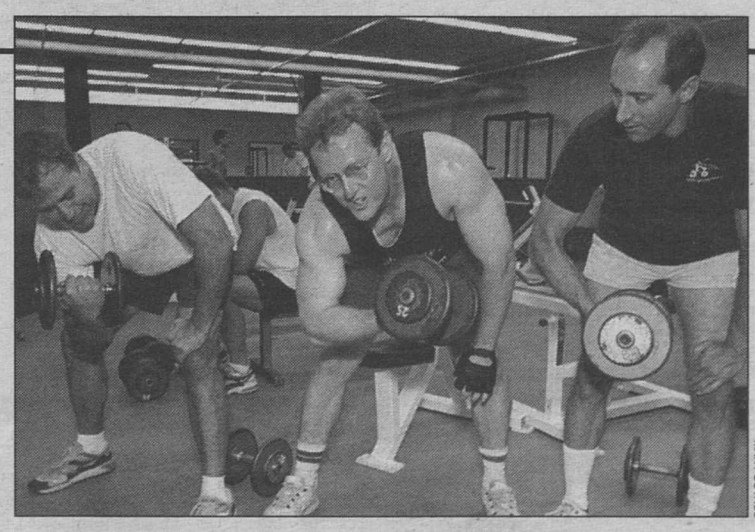
Education B.A., M.A., the College of William and Mary, Va.; Ph.D., the University of California-Irvine

Position Associate professor, Department of Computer Science, School of Engineering and Applied Science; associate professor, Mallinckrodt Institute of Radiology, School of Medicine

Hobbies Weightlifting, ballroom dancing

"It is indeed rare for a young faculty member to bring so much visibility to the department and the University in such a short time span."

Catalin Roman



MARY BUTKUS

Doug Schmidt (center) curls dumbbells with weightlifting buddies Frederick G. Kuhns (left), senior research assistant, and David Levine, research associate.